CLAIMS

1. A method of imaging a digital display onto an image plane, said method comprising the steps of:

a) providing a digital display, a plurality of lenses, and an image plane defined by a photosensitive medium, said digital display, said plurality of lenses, and said photosensitive medium spaced along an optical axis extending from said digital display through said plurality of lenses, and toward said photosensitive medium such that a digital image provided by said display may be brought into focus onto said photosensitive medium by said plurality of lenses, and one of said plurality of lenses is a transposable lens, said transposable lens capable of being transposed out of said optical axis during the operation of said printer;

b) illuminating said digital display with a first digital image data set for a fixed period of time, whereby light from each pixel of said digital display exposes a pixel image on said photosensitive medium, turning off said digital display;

c) transposing for a first time, said transposable lens a fixed distance, said fixed distance being such that each of said pixel images exposed onto said photosensitive medium is shifted by a distance equal to the width of one pixel image;

d) illuminating said digital display, with a second digital image data set, for a second fixed period of time, turning off said digital display;

e) transposing, for a second time, said transposable lens said fixed distance

f) illuminating said digital display, with a third digital image data set, for a third fixed period of time, turning off said digital display; and

g) whereby said method of imaging increases the perceived resolution of the digital image focused onto said photosensitive medium.

2. The method of claim 1 wherein each pixel of said digital display is capable of illuminating only one color.

3. The method of claim 1 wherein the movement of said transposable lens for both said transposing for a first time and said transposing for a second time are in a direction along one axis.

4. The method of claim 3 wherein the movement of said transposable lens for both said transposing for a first time and said transposing for a second time are in a direction along one axis and in the same direction.

5. The method of claim 3 wherein the movement of said transposable lens for both said transposing for a first time and said transposing for a second time are in a direction along one axis and in opposite directions.

6. The method of claim 1 wherein said first, second and third fixed periods of time are a portion of said photosensitive medium's total exposure time.

7. The method of claim 1 wherein said digital display is a liquid crystal display.

8. The method of claim 1 wherein said first digital image data set, and said second digital image data set, and said third digital image data set, are all the same digital image data set.

9. A printer having a housing that encloses, in a common cavity thereof, an arrangement comprising a digital area array display, a plurality of lenses, and an image plane onto which a photosensitive medium may be superposed, the arrangement is such that:

(a) said plurality of lenses are located between said digital area array display and said image plane;

(b) said digital area array display, said plurality of lenses, and said image plane are spaced along an optical axis extending from said digital area array display through said plurality of lenses, and toward said image plane such that a digital image provided by said display can be brought into focus onto said imaging plane by said plurality of lenses;

(c) one of said plurality of lenses is a transposable lens, the diopter power of said transposable lens is less than the diopter power of said first lens, and said transposable lens capable of being transposed out of said optical axis during the operation of said printer, said transposable lens moving in incremental lengths equaling the width of one pixel; and

(d) whereby said printer increases the perceived resolution of the digital image focused onto said imaging plane.

10. The printer of claim 9 wherein each pixel of said digital display illuminates in only one color.

11. A device for transposing a transposable lens within a printer, said device comprising:

a lever having a first end and a second end, said second end arranged for supporting the transposable lens; said first end disposed with a member and a first linear motion control device, said lever also including a pin, whereby said lever being angularly rotatable about said pin;

said member having a member first end and a member second end, said member second end coupled with a second linear motion control device; and

wherein said device transposes the transposable lens out of an optical axis during the operation of the printer, to increase the perceived resolution of a digital image focused onto an imaging plane.

12. The device of claim 11 further comprising a first biasing means coupled at one end with a member first end, and a second end of said first biasing means being permanently fixed, a second biasing means coupled at one end with said first end of said lever, and a second end of said first biasing means being permanently fixed.

13. The device of claim 11 wherein the movement of the transposable lens is substantially along only one axis.

14. The device of claim 11 further comprising a first stop permanently fixed at one end to a printer housing, and a second stop permanently fixed at one end to said printer housing, whereby said first and second stops limit the travel of said member.

15. The device of claim 11 wherein said first and second linear motion control devices are solenoids.